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**SECTION 9-2 – GUIDED READING WORKSHEET**

**KREBS CYCLE & ELECTRON TRANSPORT CHAIN**

**Introduction (pg. 226)**

1. At the end of glycolysis how much of the energy in a glucose molecule is still not used?

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2. Because the Krebs cycle and Electron Transport Chain require oxygen, they are said to be

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**The Krebs Cycle (pgs. 226-227)**

3. Where does the pyruvic acid from glycolysis go? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

4. What is product of cell respiration does the pyruvic acid become? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

5. Why is the Krebs cycle also called the Citric Acid Cycle? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

6. When does Krebs cycle begin? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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7. How many molecules of CO2 are released due to Krebs Cycle? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

8. How many ATP molecules are produced because of Krebs Cycle? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

9. When NAD+ and FAD+ pick up an electron, what do they form? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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**Electron Transport Chain (pgs. 228-229)**

10. What is the electron transport chain? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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11. What are the high energy electrons used for in the Electron Transport Chain? \_\_\_\_\_\_\_\_\_\_\_

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12. Where does the electron transport chain occur in eukaryotes? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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13. Where does the electron transport chain occur in prokaryotes? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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14. Where does the electron transport chain get the high energy electrons from? \_\_\_\_\_\_\_\_\_\_\_\_

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15. True or false. Hydrogen serves as the final electron acceptor in the electron transport chain?

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16. How many ATP molecules are made as each pair of electrons moves down the Electron

Transport Chain? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**THE TOTALS (page 229)**

17. What is the total number of ATP molecules made during Cell Respiration? \_\_\_\_\_\_\_\_\_\_\_\_\_\_

18. What happens to the 62% of energy not used to make ATP molecules? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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19. What are the final produces of cellular respiration? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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**Energy & Exercise (pgs. 230-231)**

20. What are three sources of ATP that the human body uses at the beginning of exercise?

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21. When a runner needs quick energy for a short race, what supplies the ATP for about

90seconds? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

22. Why does a sprinter have an oxygen debt to repay after a race is over? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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23. A long distance runner needs more energy. How does the body make the ATP required for

the longer race? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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24. Why is aerobic exercise good to control weight? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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**Comparing Photosynthesis & Cellular Respiration (pg. 232)**

25. If Photosynthesis is the process that “deposits” energy, then what is cellular respiration?

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26. How are photosynthesis and cellular respiration opposites in terms of CO2? \_\_\_\_\_\_\_\_\_\_\_\_\_

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27. How are photosynthesis and cellular respiration opposites in terms of O2? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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**Word Wise**

***Match each definition in the left column with the correct term in the right column. Then write the number of each term in the box below on the line under the letter. When you have filled in all the boxes, add up the numbers in each column, row and diagonal. What do you notice?***

**Definition** **Term**

A. The process that releases energy from food molecules 1. Krebs cycle

by producing ATP in the absence of oxygen.

2. anaerobic

B. The second stage of cellular respiration.

3. calorie

C. An electron carrier .

4. electron transport chain

D. The stage of cellular respiration where glucose is

broken into 2 molecules of pyruvic acid. 5. cellular respiration

E. The process that releases energy from food molecules 6. fermentation

in the presence of oxygen.

7. glycolysis

F. The amount of energy required to raise the temperature

of 1 gram of water 10C. 8. NAD+

G. A process that does not require oxygen. 9. aerobic

H. A process that requires oxygen.

I. A series of carrier proteins in the inner membrane of

mitochondria.

= \_\_\_\_\_

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| --- | --- | --- |
| A  \_\_\_\_\_\_ | B  \_\_\_\_\_\_\_ | C  = \_\_\_\_\_  \_\_\_\_\_\_\_ |
| D  \_\_\_\_\_\_\_ | E  \_\_\_\_\_\_\_\_ | = \_\_\_\_\_  F  \_\_\_\_\_\_ |
| G  \_\_\_\_\_\_  = \_\_\_\_\_ | H  \_\_\_\_\_\_  = \_\_\_\_\_ | = \_\_\_\_\_  I  \_\_\_\_\_\_  = \_\_\_\_\_  = \_\_\_\_\_ |